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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/026,055

12/20/2001

Ralph H. Johnson

V637-01520 US

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7590

12/09/2002

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EXAMINER

NGUYEN, TUAN M

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 12/09/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/026,055

Applicant(s)

JOHNSON, RALPH H.

Examiner

Tuan M Nguyen

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

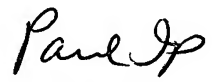
- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.


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TECHNOLOGY CENTER 2800

DETAILED ACTION

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

2. A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

3. Claims 1-6 are provisionally rejected under the judicially created doctrine of double patenting over claims 1-44 of copending Application No. 10/026020, claims 1-59 of copending Application No. 10/026044. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

4. Claims 1, 3 and 5 of Application No. 10/026055 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAs; GaAsN barrier layers; GaAsN confinement layers. Further claim 3 recite an AlGaAs confinement layers and claim 5 recites AlGaAs barrier layers. The limitation in the claims of this application is basically the same as the limitations in the claim 1 of the copending application 10/026020.

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Claim 1 of copending application number 10/026020 recites a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAsSb. The claims recite alternative substitution elements such as Al, In, N, Sb, with the basic material GaAs. Therefore claims 1-6 and claims 1-44 of copending Application No. 10/026020 are considered as the "same invention". Furthermore, the substituted elements are disclosed in each application specification and title of the invention. Thus, the claims are not patentable distinct from each other.

5. Claims 1, 3 and 5 of Application No. 10/026055 recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of InGaAs; GaAsN barrier layers; GaAsN confinement layers. Further claim 3 recite an AlGaAs confinement layers and claim 5 recites AlGaAs barrier layers. The limitation in the claims of this application is basically the same as the limitations in the claim 1, 37 and 48 of the copending application 10/026044.

Claim 1 of copending Application No. 10/026044 recites a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of GaAsSb. Further claims 37 and 48 recite GaAsSbN. Furthermore claim 48 recites AlGaAs confinement layers. The claims recite alternative substitution elements such as Al, In, N, Sb, with the basic material GaAs. Therefore claims 1-6 and claims 1-59 of copending Application No. 10/026044 are considered as the "same invention". Furthermore, the substituted elements are disclosed in each application specification and title of the invention. Thus, the claims are not patentable distinct from each other.

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Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding to claims 1, 3 and 5, the claims recite a VCSEL comprising at least one quantum well having a depth of at least 40 meV and comprised of GaAsN, GaAsN barrier layers sandwiching said at least one quantum well; and GaAsN confinement layers sandwiching said barrier. Claims 3 and 5 further recite AlGaAs confinement layers and AlGaAs barrier layers. The claims fail to provide any means, any structure and any structural relationship in order to support the VCSEL in the claims, which render the claims confusing, vague and indefinite.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eglash et al (5,251,225) in view of Jewell et al (6,359,920).

With respect to claim 1, Eglash discloses a quantum well diode laser comprises an active region (18) includes barrier layers (22) sandwiching the quantum well layers (20) and confinement layers (14 and 16) sandwiching the barrier layers, see fig. 1. However Eglash does not disclose the quantum well having a depth of at least 40 meV and comprised of InGaAs. Whereas Jewell et al discloses the quantum well having 40 meV and comprised of InGaAs, note col. 34 line 53 to col. 37 line 19, see figs. 2b and 8-10b. For the advantageous of the quantum well having barrier layers and confinement layers are comprised of GaAsN, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Eglash with the GaAsN barrier layers and GaAsN confinement layers as taught or suggested by Jewell et al.

With respect to claims 2, 4 and 6, Jewell et al discloses the quantum well having 50 Å in thickness, note cols. 25-26.

With respect to claim 3, Jewell discloses the quantum well having a depth at least 40 meV and comprised of InGaAs includes of GaAsN barrier layers and AlGaAs confinement layers, note col. 25 line 25 to col. 37 line 19, see figs. 2b and 8-10b.

With respect to claim 5, Jewell discloses the quantum well having a depth at least 40 meV and comprised of InGaAs includes of AlGaAs barrier layers and GaAsN confinement layers, note col. 29 line 36 to col. 37 line 19, see figs. 2b -10b.

Citation Of The Pertinent References

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Sasanuma et al (US patent 6,252,894) discloses semiconductor laser using gallium nitride series compound semiconductor.

The patent to Arakawa et al (US patent 5,757,833) discloses semiconductor laser having a transparent light emitting section and a process of producing the same.

The patent to Van de Walle et al (US patent 5,383,211) discloses TM polarized laser emitting using III-V alloy with nitrogen.

Communication Information

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

The examiner can normally be reached on 8am to 5pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip
SPE
Art unit 2828

TMN
December 3, 2002